

WHAT IS CLAIMED IS:

1. An optical disk apparatus for recording or reproducing data on and from an optical disk, the apparatus
5 comprising:

a wobble of said optical disk being a sawtooth wobble which is obtained as a result of a sine wave being added to or subtracted from a cosine wave of predetermined frequency;

light-receiving means for receiving a laser beam
10 reflected from said optical disk; and

wobble processing means for acquiring a wobble signal from a signal output from said light-receiving means, wherein said wobble processing means comprises

differentiating means for differentiating a signal
15 output from said light-receiving means;

binarizing means for binarizing a differential signal from said differentiating means through use of a threshold value;

pulse length detection means for detecting pulse
20 lengths of two values of a binary signal from said binarizing means; and

demodulation means for demodulating said binary signal in accordance with said pulse lengths of said respective two values of said binary signal.

25 2. The apparatus according to claim 1, wherein said threshold value is a zero level of said differential signal.

3. The apparatus according to claim 1, wherein said threshold value is an intermediate level between a peak value and a bottom value of said differential signal.

4. The apparatus according to claim 1, wherein said demodulation means compares pulse lengths of said two values of said binary signal with each other, to thus determine which one of said pulse lengths is longer than the other pulse length.

5. The apparatus according to claim 1, wherein said demodulation means compares at least any one of pulse lengths of said two values of said binary signal with a reference value, to thus determine whether said pulse length is larger or smaller than said reference value.

6. The apparatus according to claim 1, wherein, when a sawtooth wobble obtained as a result of a sine wave being added to a cosine wave of predetermined frequency is taken as a +STW and when a sawtooth wobble obtained as a result of said sine wave being subtracted from said cosine wave of predetermined frequency being taken as a -STW, said demodulation means determines said sawtooth wobble as a +STW or a -STW in accordance with the pulse lengths of said two values of said binary signal.

7. The apparatus according to claim 1, further comprising:

means for eliminating noise from a rise or fall timing of said binary signal output from said binarizing means and outputting said timing to said pulse length detection means.

8. An optical disk apparatus for recording or reproducing data on and from an optical disk, the apparatus comprising:

a wobble of said optical disk being a sawtooth wobble including a +STW signal obtained as a result of a sine wave

being added to a cosine wave of predetermined frequency and a
-STW signal obtained as a result of a sine wave being
subtracted from said cosine wave of predetermined frequency;

5 a pickup for receiving a laser beam reflected from said
optical disk;

a bandpass filter for extracting a wobble signal of
predetermined frequency from a signal output from said pickup;

a differentiator for differentiating a signal output
from said bandpass filter;

10 a binarizer for binarizing a differential signal from
said differentiator through use of a threshold value; and

a decoder which detects, from binary signal output from
said binarizer, a signal length equal to or larger than said
threshold value and a signal length smaller than said
15 threshold value and which determines said binary signal as
said +STW signal when said signal length equal to or larger
than said threshold value is longer than said signal length
smaller than said threshold value and which determines said
binary signal as said -STW signal when said signal length
20 equal to or larger than said threshold value is shorter than
said signal length smaller than said threshold value.

9. The apparatus according to claim 8, further
comprising:

a detector for detecting a zero level of said
25 differential signal, wherein

said binarizer binarizes said differential signal while
taking said zero level as said threshold value.

10. The apparatus according to claim 8, further
comprising:

a peak detector for detecting a peak value of said differential signal; and

a bottom detector for detecting a bottom value of said differential signal, wherein said binarizer binarizes said
5 differential signal while taking, as said threshold value, an intermediate level between said peak value and said bottom value.